

**Erosion and Deposition** ▪ *Section Summary*

# Wind

**Guide for Reading**

- How does wind cause erosion?
- What features result from deposition by wind?

A **sand dune** is a deposit of wind-blown sand. Wind is the weakest agent of erosion. Yet wind can be a powerful force in shaping the land in areas where there are few plants to hold the soil in place. For example, in deserts, few plants grow, where wind can easily move the grains of dry, light sand.

**Wind causes erosion by deflation and abrasion.** Geologists define **deflation** as the process by which wind removes surface materials. When wind blows over the land, it picks up particles of sediment. The stronger the wind, the larger the particles that it can pick up and move through the air. Particles that are too heavy to be picked up might skip or bounce for a short distance. Strong winds can even roll heavier sediment particles over the ground. Deflation does not usually have a great effect on the land. In deserts, though, deflation can sometimes create an area of rock fragments called desert pavement. There, wind has blown away the smaller sediment. All that remains are rocky materials that are too heavy to be moved by wind.

Abrasion by wind-carried sand can polish rock, but it causes little erosion. At one time, geologists thought such abrasion cut the stone shapes seen in deserts. But evidence now shows that most desert landforms are the result of weathering and water erosion.

All sediment picked up by wind eventually falls to the ground. This happens when wind slows down or some obstacle, such as a boulder or clump of grass, traps the windblown sand and other sediment. **Wind erosion and deposition may form sand dunes and loess deposits.** When wind carrying sand strikes an obstacle, the result is usually a sand dune. Sand dunes can be seen on beaches and in deserts where windblown sediment has built up. Sand dunes come in many shapes and sizes. Sand dunes move over time. Plant roots can help anchor a sand dune in place.

Sediment that is finer than sand is sometimes deposited in layers far from its source. This fine, wind-deposited sediment is **loess**. Large loess deposits are found in central China and in such states as Nebraska, South Dakota, Iowa, Missouri, and Illinois. Loess helps form fertile soil.